REMARKS

The Office Action dated July 21, 2004 has been received and carefully considered. In this response, claims 1, 8, 9, 14, 16, 17, 24, 25, 28, 34 and 37 have been amended and claims 2 and 10 have been canceled. Support for the amendments to the claims may be found in the specification and figures as originally filed. Reconsideration of the outstanding rejections in the present application is therefore respectfully requested based on the following remarks.

Allowability of Claims 25-27 and 38-42

The Applicants note with appreciation the indication at page 12 of the Office Action that claims 38-42 are allowable and claims 25-27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Applicants have opted to defer rewriting claims 25-27 as independent claims in view of the remarks provided herein.

Anticipation Rejection of Claims 1-23

At page 2 of the Office Action, claims 1-23 were rejected under 35 U.S.C. § 102(e) as being anticipated by West (U.S. Patent No. 6,339,434). This rejection is respectfully traversed with amendment.

Claim 1, from which claims 3-8 depend, has been amended to recite the additional limitations originally recited by claim 2 (now canceled). Claim 1 presently recites, in part, the limitations of generating a second set of pixel values related to a first set of pixel values to represent a first pattern with a second rate of change, re-sampling the second set of pixel values to generate a portion of a second image frame, wherein the second image frame represents a first image frame at a second resolution, different from a first resolution, and wherein generating the second set of pixel values includes replicating pixel values from the first set of pixel values. Claim 9, from which claims 11-16 depend, also has been amended to recite similar additional limitations as originally recited by claim 10 (now canceled). Claim 17, from which claims 18-23 depend, recites the similar limitations of a replication unit to replicate pixel values from a first set of pixel values to generate a second set of pixel values, wherein the second set of pixel values

represent the first pattern with a second rate of change, less than the first rate of change, and a re-sampler to re-sample the second set of pixel values to generate a portion of a second image frame, wherein the second image frame represents the first image frame at a second resolution.

With respect to the limitations of the second set of pixels resulting from pixel values replicated from a first set of pixels, the Examiner asserts that West discloses these limitations in that the Abstract of West states "Sample rate converters increase or decrease the image size by a factor of Lx/Mx in the horizontal dimension and Ly/My in the vertical dimension . . ." *Office Action*, p. 3. However, the Applicants respectfully submit that nothing in this passage either expressly or inherently suggests that the image size is increased through pixel value replication, only that the image size is scaled. Moreover, the remaining passages of West fail to disclose or even suggest image scaling based on pixel replication. In fact, West teaches that the image scaling occurs through the use of an FIR filter 27 (Figure 3, West) to generate interpolated pixel values located between the original pixel values, rather than the replication of the original pixel values as recited by claims 1, 9 and 17. To illustrate, West teaches that

> The sample rate converters 21 and 22 shown in FIG. 1 according to the present invention each include an up sampler 26, a low pass FIR filter 27, and a decimal down sampler 28. *The up sampler 26 transforms the input coordinate space 29 (a serial stream of pixel data) into an intermediate up sampled space 30 by inserting (L1) zeros as illustrated in FIG. 3. Again referring to FIG. 3, the FIR filter 27 transforms the up sampled data 30 into the interpolated result 31.*

West, col. 3, lines 38-46 (emphasis added).

Thus, West teaches that the generation of a second set of pixel values (the "intermediate up sampled space 30") is based on the insertion of "(L1) zeros" into the first set of pixel values (the "input coordinate space 29") and then applying a FIR filter 27 to the pixel stream having the zeros to provide the interpolated pixel values in the interpolated result 31. In contrast, claims 1, 9 and 17 recite the limitations of replicating the first set of pixel values to generate the second set of pixel values rather than interpolating new pixel values.

Additionally, the Applicants respectfully submit that the Examiners reliance on Figures 7A and 7B of West as allegedly disclosing the limitations of generating the second set of pixel values and re-sampling the second set of pixel values to generate a portion of a second image as recited by claims 1, 9 and 17 is inconsistent with the teachings of West. As disclosed by West,

The FIR phase is used as an address to fetch coefficients from a coefficient memory, for example, storage RAMs 63. The input pixel position is used to control an input pixel delay line 66 by advancing this pipeline until the required non-zero input pixels are present. The output pixel value is then calculated using multipliers 64 and adders 65. The length of the FIR filter can be increased without using additional multipliers by using an optional recirculation adder 68 that is enabled by selecting the feedback path through multiplexer 67. . . .

Likewise, using the FIR phase and input pixel position defined in FIG. 6 the circuit in FIG. 7B calculates the output pixel value for the case of a vertical scaling circuit or vertical sample rate converter.

West, col. 5, lines 1-26.

From the above passage, it will be appreciated that Figures 7A and 7B of West disclose the operation of the FIR filter 27 which "transforms the up sampled data 30 into the interpolated result 31", *i.e.*, the scaling of the initial pixel values to the scaled pixel values. *Id.*, col. 3, lines 45-46. Neither Figures 7A and 7B nor the related passages of West disclose that re-sampling of the scaled image data is achieved as a result of the adders 65. It therefore is respectfully submitted that Figures 7A and 7B and their associated passages of West do not support the Examiner's assertion that the limitations of re-sampling the second set of pixel values to generate a portion of a second image frame are met by the adder 65 of Figures 7A and 7B of West.

Accordingly, the Applicants respectfully submit that the West fails to disclose or suggest at least the limitations of replicating pixel values from the first set of pixel values to generate the second set of pixel values as recited by claims 1, 9 and 17. Consequently, the Office Action fails to establish that West discloses each and every limitation of claim 1, 9 and 17, as well as claims 3-8, 11-16 and 18-23 at least by virtue of their dependency on one of claims 1, 9 or 17. Moreover, these dependent claims recite additional limitations neither disclosed nor suggested by the cited references. For example, claims 6, 14 and 20 recite the limitations of wherein the re-sampling process includes multi-tap filtering. With respect to these limitations, the Examiner asserts that Figures 2, 7A and 7B of West disclose the use of multi-tap filtering. *Office Action*, p. 4. However, as noted above, West teaches the use of FIR filtering (which the Examiner appears to equate to multi-tap filtering) to interpolate zero values in a first set of pixel values to generate a second set of pixel values. In other words, West teaches the use of a FIR filter to scale a set of pixel values, but West does not teach the use of FIR filtering to re-sample the scaled set of pixel values as recited by claims 6, 14 and 20. Instead, West teaches that re-sampling the scaled set of

pixel values simply comprises a process whereby "[e]very M_{th} value of the interpolated result 31 is selected for output by the down sampler 28." *West*, col. 3, lines 46-47; *see also West*, Figures 3 and 4.

In view of the foregoing, it is respectfully submitted that the anticipation rejection of claims 1-23 is improper at this time and withdrawal of this rejection therefore is respectfully requested.

Obviousness Rejection of Claims 24 and 28-37

At page 9 of the Office Action, claims 24 and 28-37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over West. This rejection is respectfully traversed.

Claim 24, from which claims 28-37 depend, recites, in part, the limitations of receiving an absolute alpha value, wherein the absolute alpha value represents a position, within a first range of alpha values, relative to a first source pixel. The Examiner asserts that the limitations of receiving an absolute alpha value that represents a position, within a first range of alpha values, relative to a first source pixel is "met by multiplier 82 which [receives] the output of coefficient RAM 63, Fig. 7A." Thus, the Examiner appears to equate the output of coefficient RAM 63 of Figure 7A of West to an absolute alpha value that represents a position relative to a first source pixel. However, the Applicants respectfully submit that the Examiner's proposed interpretation of the output of coefficient RAM 63 as an absolute alpha value that represents a position relative to a first source pixel is inconsistent with the teachings of West. To illustrate, West discloses that "[t]he FIR phase is used as an address to fetch coefficients from a coefficient memory, for example, storage RAMs 63," *West*, col. 5, lines 4-6, where the "coefficients" output by the coefficient RAM 63 are FIR coefficients for the FIR 27. *See, e.g., West*, col. 4, lines 65-67 ("[t]he FIR phase is used *to select a set of filter coefficients*, as further explained below, for the terms that contribute (non-zero) to the current output pixel)(emphases added). Thus, the output of the coefficient RAM 63 is FIR filter coefficients, and as will be understood by those skilled in the art, FIR filter coefficients typically do not represent a position, within a first range of values, relative to a first source pixel as recited by claim 24. Accordingly, it is respectfully submitted that the Office Action fails to establish that West discloses the limitations of receiving an absolute alpha value as recited by claim 24.

Claim 24 further recites the limitations of amplifying the absolute alpha value by a factor to generate an amplified alpha value and normalizing the amplified alpha value to generate a normalized alpha value so that the normalized alpha value represents a position relative to the first range of alpha values. The Examiner admits that West does not teach these limitations and instead asserts that "amplifying or scaling the alpha, coefficient or such other values in order to generate a desired scaling of the resultant data (or image in this case) would have been an obvious matter of design choice, since such a modification would have involved a mere change in the size of the component (or the output image)." The Examiner further cites *In re Rose*, 105 U.S.P.Q. 237 (CCPA 1955), in support of the statement "[a] change in size is generally recognized as being within the level of one of ordinary skill in the art."

As a first issue, the Applicants respectfully submit that claim 24 does not recite the limitations that the alpha value is amplified or scaled "in order to generate a desired scaling of the resultant data" as suggested by the Examiner and the Applicants therefore respectfully object to the Examiner's characterization of the subject matter of claim 24 as such. As a second issue, the Applicants respectfully submit that the issues involved with the patent that was the subject of *In re Rose* are materially different from those presented by claim 24. At issue in *In re Rose* was the fact that the Appellant in that case "[argued] that [the] claim recites that the package is of appreciable size and weight so as to require handling by a lift truck whereas Wheless and Denison packages can be lifted by hand." *In re Rose*, 42 C.C.P.A. 817, 822 (C.C.P.A. 1955) (citing *In re Yount*, 36 C.C.P.A. 775, 171 F.2d 317, 80 USPQ 141.) The court opined that "We do not feel that this limitation is [1] patentably significant since it at most relates to the size of the article under consideration which is not ordinarily a matter of invention." *Id*. Thus, the holding of In re Rose is that a mere difference in size between the object of the prior art and the object of the claimed invention is "not ordinarily a matter of invention." However, claim 24 does not simply claim an alpha value that is different in size compared to some alpha value disclosed in the prior art. Instead, claim 24 recites the process whereby the alpha value is amplified and normalized, but not in relation to a known alpha value. Thus, the holding of *In re Rose* is immaterial to the novelty of claim 24.

In view of the foregoing, it is respectfully submitted that the Office Action fails to establish that West discloses or suggests the limitations of an absolute alpha value that represents

a position, within a first range of alpha values, relative to a first source pixel as well as the limitations of amplifying the absolute alpha value and normalizing the amplified alpha value as recited by claim 24. Accordingly, the Office Action fails to establish that West discloses or suggests each and every limitation of claim 24, as well as each and every limitation of claims 28-37 at least by virtue of their dependency from claim 1. Moreover, these claims recite additional limitations neither disclosed nor suggested by the cited references.

Accordingly, it is respectfully submitted that the obviousness rejection of claims 24 and 28-37 is improper at this time and withdrawal of this rejection therefore is respectfully requested.
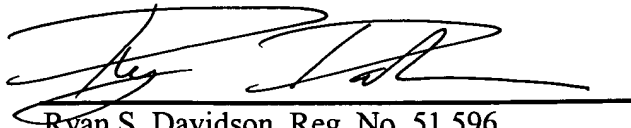
Conclusion

The Applicants respectfully solicit withdrawal of all rejections based on the arguments and amendments provided herein. An early indication of allowance of all of the claims is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.

The Applicant does not believe that any additional fees are due, but if the Commissioner believes additional fees are due, the Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-0441.

Respectfully submitted,

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Date

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